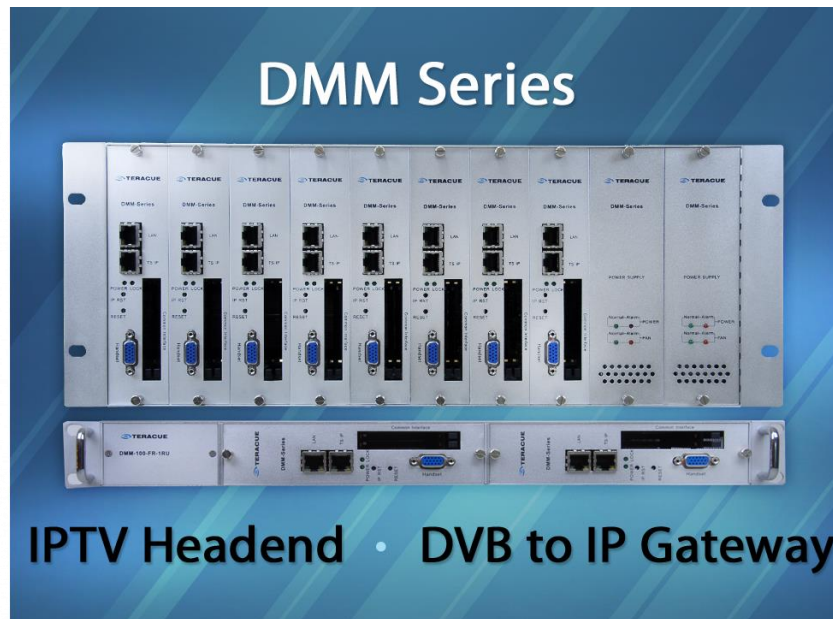


DMM-220



User Guide V1.1

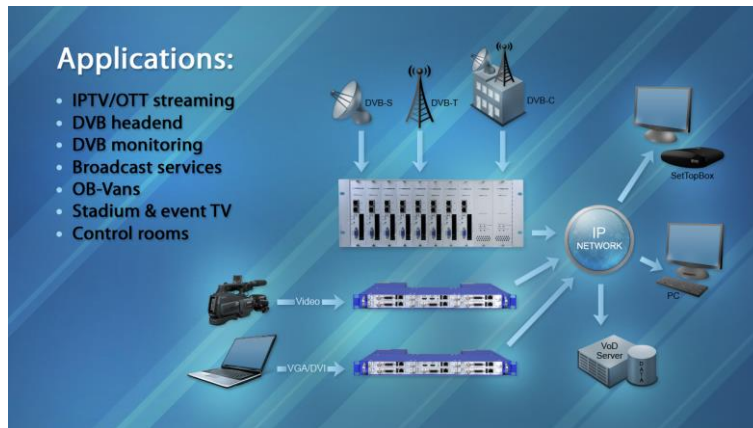
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Fax: +49 (0)8134-555-199

info@teracue.com
www.teracue.com

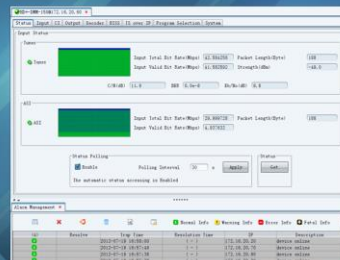
Applications:

- IPTV/OTT streaming
- DVB headend
- DVB monitoring
- Broadcast services
- OB-Vans
- Stadium & event TV
- Control rooms



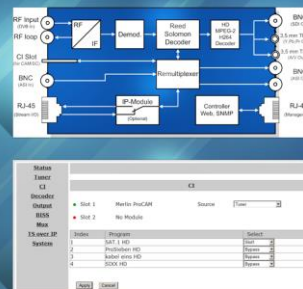
Main Features:

- DVB-S/S2/T/T2/C modules
- Dual CI slot and BISS-1/E decrypt
- 4 RU 19" with dual PS for 8 modules
- 1 RU 19" for 2 modules
- Stand alone function of each module
- Hot swappable modules
- Local configuration by handheld unit
- Remote configuration by web and SNMP



Main Features:

- MPTS (DVB) & SPTS (IPTV) streaming
- 2 IP ports for streaming & management
- Unicast/Multicast with TS over UDP/RTP
- ASI inputs & outputs
- Remux, filtering & PID remapping
- Video/Audio outputs for signal monitoring
- Composite, Component & SD/HD-SDI
- DMM-140: MPEG-2 SD
- DMM-150: MPEG-2 & H264 SD and HD



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I. Information about the manual



This manual is designed to help administrators and users to install the DMM-220 on their computer.

If you received this publication as a PDF, then it's a good idea to print it out for future reference.

It is best to use this user guide directly in front of your computer, by doing so you try out everything at once.

!. Important features are marked by this sign.

II. Content

1. OVERVIEW	6
1.1 CHARACTERISTICS	6
1.2 MAIN FEATURE	6
1.3 DMM-100 MAIN CHASSIS	6
1.4 DMM-100 CU HANDHELD PROGRAMMER UNIT	6
1.5 DMM-220 SERIES PROFESSIONAL MULTI-FORMAT HD/SD IRD AND PROCESSOR MODULE	7
2. CONTROL WITH DISPLAY AND KEYPAD	7
3. CONTROL WITH WEB SERVER	11
3.1 STATUS MENU	11
3.2 TUNER	12
3.3 CI	13
3.4 BISS	14
3.4.1 Output	14
3.4.2 MUX	15
3.4.3 IP Out	15
3.4.4 IP In	18
3.4.5 Backup	19
3.4.6 Decoder	19
3.4.6.1 Audio	19
3.4.6.2 Video	20
3.4.6.3 Decoder Play	21
3.4.7 System	22
3.4.7.1 Device	22
3.4.7.2 Version	22
3.4.7.3 Network	23
3.5 DMM-140 DECODER MODULE	24
3.5.1 Status Menu	24
3.5.2 Input Menu	25
3.5.3 Output Menu	25
3.5.3.1 ASI Output	25
3.5.3.2 ASI2/SDI	26
3.5.3.3 Decoder Play	26
3.5.3.4 Decoder Config	27
3.5.4 CI	28
3.5.5 IP Out	29
3.5.6 IP In	31
3.5.7 System	32
4. CONTROLE ADVANCED SETTINGS WITH HDMS	34
5. TECHNICAL SPECIFICATION	41
5.1 DMM-140 SERIES	41
5.2 DMM-150 SERIES	43
5.3 DMM-130 TM SERIES	46
5.4 DMM-130 MX RE-MULTIPLEXER MODULE	49
5.5 DMM-130 TP	49
6. FAQ	50
6.1 WHAT IS A "GOOD" INPUT SIGNAL FOR SATELLITE RECEPTION?	50
7. STATEMENT OF CONFORMITY DMM-140-SERIES	51
8. STATEMENT OF CONFORMITY DMM-150-SERIES	52
9. STATEMENT OF CONFORMITY DMM-220-SERIES	53

1. Overview

1.1 Characteristics

DMM-220 is a compact modular digital TV head end that includes professional MPEG-2 and H.264 SD/HD IRD, MPEG-2 and H.264 SD/HD, Re-Multiplexer, DVB Scrambler. Within 19" 4RU chassis, it provides 8 slots for any type of modules with redundant power supply. Also available 19" 1RU chassis for 2 slots with single power supply. With flexible solution and the high density, DMM-220 offers operators the advanced head end architectures in the marketplace for delivering analog and digital broadcast services to their subscribers. Coming with more new modules, DMM-220 is most suitable for future multiple network architectures: streaming and multiplexing of digital content over IP based networks and conversion of digital content for analog networks.

1.2 Main Feature

- DVB-S2/S, DVB-S, DVB-C, DVB-T2/T IRD modules with CI
- 8 Way re-multiplexer module
- DVB Simulcrypt, BISS-1, BISS-E scrambler module
- Rich interface with ASI, IP, SDI, YPbPr, CVBS, XLR
- Web, SNMP Remote Control or handheld programmer unit local control
- 4RU 19" chassis compact modular design, supporting up to 8 modules with redundant power supply.
- 1RU 19" chassis compact modular design, supporting up to 2 modules with single power supply
- Functional module hot-swappable
- Intelligent cooling system
- Stand alone function of each module
- Cost-saving by backward compatible with new modules
- On site software update through IP

1.3 DMM-100 Main Chassis

- Standard 19" 4RU chassis with 8 slots for functional modules and 2 slots for power supplies
- Hot-swappable power supply unit
- Intelligent cooling system
- Wall mounted or Rack mounted
- Backward compatible with new modules
- Power Supply: AC 100V-260V, 50-60Hz
- Optional Build-in IP Switch
- 19" 1RU chassis with 2 slots and single power supply
- Dimension: L: 40,3 cm, W: 48,3 cm, H: 17,5 cm

1.4 DMM-100 CU Handheld Programmer Unit

- 2 x 20 LCD display screen and 6-key keypad
- No external power or battery needed
- Easy and quick on site system configuration without PC
- Backward compatible with new modules
- Dimension: L: 17,0 cm, W: 7,5 cm, H: 2,1 cm

1.5 DMM-220 Series

Professional Multi-format HD/SD IRD and Processor Module

- Multiple inputs DVB-T2/S2/S/C/T/T2, TS/IP and ASI
- SD/HD MPEG-2 and H.264 digital video decoding
- Digital audio decoding and loop through via SDI, HDMI and AES-EBU
- Multiple analogue and digital outputs, ASI, CVBS, YPbPr, HDMI, SD/HD-SDI, TS/IP
- Flexible re-multiplexing between 2 x Tuner and TS/IP Inputs
- 2x DVB-CI slots, multi programs, BISS 1 and BISS E decryption
- Dynamic PMT detection and automatic updating
- Support VBI TELETEXT, EBU/ DVB subtitle, closed caption
- UDP/RTP & Unicast/Multicast SPTS and MPTS over IP I/O
- Remote control and supervision by SNMP, HTTP WEB
- PCM audio embedded in SDI output or PCM audio over HDMI
- PCM output on two AES/EBU output ports
- On Site software update through HTTP WEB or USB
- RSSI, received Eb/No & BER monitoring

2. Control with Display and Keypad

Main-Menu	Sub-Menu	Description
Inputs	Status	ASI: Display ASI input status TUNER: Display tuner input status IP IN: Display IP input status
	DVB-S2	LNB Frequency: Input LNB frequency Satellite Frequency: Input downstream frequency of satellite Symbol Rate: Input symbol rate of satellite LNB Voltage: Off/13V/18 V LNB 22KHz: 22KHz or Off. DISQEC: Port A/Port B/Port C/Port D/DiSEQC OFF PLS Gold Code: 0~5000 Frequency Offset High: 5000KHz Frequency Offset Low: -5000KHz
	QAM	Constellation: 16/32/64/128/256QAM/64B/256B Frequency: Enter the frequency of the QAM signal in MHz. Symbol Rate: Edit the symbol rate to the proper value in kBaud.
	COFDM	Frequency: Input terrestrial frequency. Bandwidth: select bandwidth from 6MHz, 7 MHz and 8 MHz.
	RSSI	Tuner Status: Display tuner status Strength Display: Display the strength of tuner signal
	Ethernet	Stream IP Addr: 1.0.0.1~223.255.255.254 Stream Netmask: 1.0.0.1~223.255.255.254 and 0.0.0.0 Stream Gateway: 1.0.0.1~223.255.255.254 and 224.0.0.0~239.255.255.255 Stream Mac Address: Display MAC address Multicast IP Addr: Enter the IP address of the multicast stream for the transport stream over IP. Multicast UDP Port: Enter the UDP port number of the TS over IP stream. Protocol: UDP/RTP. Output Smoothing: <ul style="list-style-type: none"> ▪ Auto: the bit rate is variable.

		<ul style="list-style-type: none"> ▪ Disable: the unit let the TS pass by. ▪ Fixed Rate: the bit rate is fixed. ▪ TS Bit Rate: sets the bit rate of the TS which comes from the TS/IP input. The setting is only valid when the output smoothing is configured as Fixed Rate.
--	--	--

Main-Menu	Sub-Menu	Description
Outputs	BISS Menu	Biss Mode: Set Biss mode, can select 'OFF', 'Biss E' or 'Biss 1' Biss 1 Setup: Set Biss 1 (password is required) Biss E Setup: Set Biss E (ID number and password are required) Biss Source: Tuner/ASI Input
	CI	CI Source: MUX TS/Tuner/ASI Input Setup: Select TS CAM Name: Display CAM name of CI Slot1 and Slot2
	Decoder	Status: Show Status
		Source: CI De-encrypted/TUNER/ASI Input/Mux TS
		Program: Select programs.
		Video <ul style="list-style-type: none"> ▪ Video Standard: Select from Auto/1920x1080i 30/1920x1080i 29.97/1920x1080i 25/1280x720p 60/1280x720p 59.97/1280x720p 50/720x480p 59.94/720x480p 60/720x576p 50/720x576p 25/720x480i 29.97/720x576i 25 ▪ Screen: Select from Auto, 4:3 Full, 4:3 Letterbox, 16:9 Letterbox or 16:9 Full. ▪ DVB subtitle language: Choose DVB Subtitle language. ▪ EBU subtitle language: Choose EBU Subtitle language. ▪ Subtitle Priority: Select from DVB First or EBU First. ▪ Fail Mode: Select from Black Screen, No Sync and Still Picture. ▪ VBI Mode: Disable/Enable. VBI option only controls Closed – Caption over CVBS. To activate the CC over CVBS, enable the VBI option. ▪ Close Caption: Off/On. Controls both CC on CVBS and SDI. ▪ CVBS Sub PAL: select PAL mode, including PAL-B/D/G/H/I, PAL-N, PAL-N_C and SECAM. ▪ CVBS Sub NTSC: select NTSC Mode, including NTSC-M, NTSC-M_J, NTSC-M_443 and PAL-M. Note: the sub-menus VBI Mode, CVBS Sub PAL and CVBS Sub NTSC will only show up when the Closed Caption option is on.
	ASI1/2	ASI1/2 Source: CI De-encrypted/TUNER/ASI Input/Mux TS
	SDI	Embedded Audios: On and Off. Closed Caption Mode: select from SMPTE 708, SMPTE 608, Line 21, and Auto. The mode of closed caption needs to be selected based on the video resolution. SMPTE 708 and SMPTE 608 are more suitable for HD video; SMPTE 608 and Line 21 are for SD. When select Auto, the unit will choose SMPTE 608 for HD video, and Line 21 for SD video. Note: Before doing the setup, be sure to enable the Closed

		Caption switch in the menu Decoder- Video.
	Mux	<p>Mux Switch: On/Off</p> <p>Bit Rate: should be set to a specified value that doesn't exceed the max physical limit of the output medium. For example, to deliver the multiplexed TS to an 8MHz DVB 256QAM modulator, it should not exceed 55000Kb/s, otherwise overflow occurs.</p> <p>TS ID: 1~65535</p> <p>Program List: Select program.</p> <p>Output Bit Rate: Display Output bit rate</p>
	Ethernet	<p>Stream IP Addr: 1.0.0.1~223.255.255.254</p> <p>Stream Netmask: 1.0.0.1~223.255.255.254 and 0.0.0.0</p> <p>Stream Gateway: 1.0.0.1~223.255.255.254 and 224.0.0.0~239.255.255.255</p> <p>Stream Mac address: Display factory-Set Mac addresses</p> <p>Gateway Mac address: Edit Gateway Mac address</p> <p>Multicast IP Addr: Enter the IP address of the Multicast Stream for the transport Stream over IP.</p> <p>Multicast UDP Port: Enter the UDP Port number of the TS over IP stream.</p> <p>Protocol: UDP/RTP</p> <p>TS Pkts Per UDP: 1~7</p> <p>Time to live: 1~255</p> <p>Type Of Service: Min Delay/Max Reliability/Max Throughput/Min Monetary Cost/Normal</p> <p>Source: Tuner/ASI input/Mux TS/CI De-encrypted</p> <p>Mode: IPTV/DVB</p> <p>Uni-/Multicast Setup</p> <ul style="list-style-type: none"> ▪ Max Channels: 1~32 ▪ Channel 0~31 <p>Switch: On/Off. Enable or disable the channel.</p> <p>Multicast IP Address: 224.0.0.0 ~ 239.255.255.255</p> <p>*(When using Unicast, the Multicast IP Address should be set as the IP address of the receiving device.)</p> <p>Multicast UDP Port: 1~65535</p> <p>Target MAC Address: Edit Target MAC Address</p> <p>Program List: Select program</p>
	Backup	<p>Main channel: ASI/Tuner.</p> <p>Backup channel: ASI/Tuner.</p> <p>Main CH Unlock Time: set Main CH Unlock Time, ranging from 0 to 59 seconds. When signal of the main channel remains the disconnected status over this value, the unit will switch to the backup channel automatically.</p> <p>Main CH Recover Time: set Main CH Recover Time, ranging from 0 to 59 seconds. When the signal of the main channel recovers and remains stable over this value, the unit will switch back to the main channel.</p>
	Local Setup	<p>IP Address: 1.0.0.1~223.255.255.254</p> <p>Netmask: 1.0.0.1~223.255.255.254 and 0.0.0.0</p> <p>Gateway: 1.0.0.1~223.255.255.254 and 224.0.0.0~239.255.255.255</p> <p>MAC Address: Display MAC Address</p>
	Trap IP Addr	Trap IP Addr
	Unit Name	Unit Name
	Properties	<p>Main Version</p> <p>Linux OS Version</p> <p>ARM S/W Version</p> <p>Decoder Version</p> <p>FPGA Version</p> <p>TS/IP Out NIOS</p> <p>TS/IP Out FPGA</p>
	Factory Setting	Enter: Yes, Exit: No


	Optional Function	External Board Type: 100M Single In/100M Single Out/No Exist Mux Function: Enable/Disable Filter Function: Select from Disable/Filter/Mux.
	HTTP Login	Modify the username and password for the WEB management.

3. Control with web server

To control the unit via Web server, type in the unit IP address in the web browser. Default username and password are as following.

Username: root
Password: 12345

3.1 Status Menu



DMM-220P-S2, Dual DVB to IP Gateway
IP Address: 172.16.124.48

	Input Status	Output Status	Decoder Status
	Input Status		
Status Tuner CI BISS Remux TS/IP ASI Output Decoder System	Tuner-1	Valid Bit Rate (Kbps) <input type="text" value="32213.695"/> Strength (dBm) <input type="text" value="-28.2"/> Eb/N0 (dB) <input type="text" value="7.5"/> Packet Length (Bytes) <input type="text" value="188"/>	Total Bit Rate (Kbps) <input type="text" value="33789.887"/> C/N (dB) <input type="text" value="9.6"/> BER <input type="text" value="1.5e-7"/>
	Tuner-2	Valid Bit Rate (Kbps) <input type="text" value="40937.695"/> Strength (dBm) <input type="text" value="-27.2"/> Eb/N0 (dB) <input type="text" value="6.8"/> Packet Length (Bytes) <input type="text" value="188"/>	Total Bit Rate (Kbps) <input type="text" value="42583.070"/> C/N (dB) <input type="text" value="9.8"/> PER <input type="text" value="≤e-9"/>
	TS/IP	Valid Bit Rate (Kbps) <input type="text"/> Link Status <input type="text"/>	Total Bit Rate (Kbps) <input type="text"/> Packet Length (Bytes) <input type="text"/>

Input Status Tuner

Valid Bitrate: valid bitrate of tuner input
 Strength: Tuner input intensity
 Eb/N0: Tuner input quality
 Packet Length: Tuner input Packet size

Total Bitrate: Total bitrate of Tuner input
 C/N: Carrier noise of tuner input
 BER: Bit error rate of tuner input

Input Status TS/IP when IP Extension Board Type is set to TS/IP in

Valid Bitrate: valid bitrate of TS/IP input
 Link Status: Link Status of TS/IP in

Total Bitrate: Total bitrate of IP input
 Packet Length: TS/IP input Packet size

Output Status

ASI-1 Valid Bitrate: valid bitrate of ASI output
 ASI-2 Valid Bitrate: valid bitrate of ASI output
 Remux Valid Bitrate: valid bitrate of Remux output

Total Bitrate: Total bitrate of ASI output
 Total Bitrate: Total bitrate of ASI output
 Total Bitrate: Total bitrate of Remux output

Decoder Status

AV Status

Video: Status of Decoder output

Audio: Status of Decoder output

Service CVBS or HDMI

Service Type: Service Name from BAT

Provider Name: Provider Name from SDT

PMT PID: PMT PID

Service Name: Service Name from SDT

Service ID: Service ID from SDT

PCR PID: PCR PID

Video Information CVBS or HDMI

Video PID: Video PID from PMT

Video Standard: Resolution

Stream Type: Stream Type MPEG or H264

Aspect Ratio: Aspect Ratio 16:9 or 4:3

Audio Information

Audio PID: Audio PID from PMT

Audio Sample Rate: Audio Sample Rate

Audio Format: Audio Format MPEG or AAC

3.2 Tuner



DMM-220P-S2, Dual DVB to IP Gateway

IP Address: 172.16.124.48

Status Tuner CI BISS Remux TS/IP ASI Output Decoder System	Tuner-1 Tuner-2	
	DVB-S2 Tuner-1	
	LNB LO Frequency (MHz)	<input type="text" value="9750"/>
	Satellite Frequency (MHz)	<input type="text" value="10744"/>
	Symbol Rate (KBaud)	<input type="text" value="22000"/>
	LNB Voltage	<input type="text" value="18V"/>
	LNB 22KHz	<input type="text" value="OFF"/>
	DiSEqC	<input type="text" value="OFF"/>
	<input type="button" value="Apply"/> <input type="button" value="Cancel"/>	

QPSK Setting

LNB Freq. (MHz):

LNB Local Oscillator Frequency

SatFreq. (MHz):

Satellite down link frequency

Symbol rate (kBAud):

Set Symbol rate

LNB Voltage:

Select from OFF/13V/18V

LNB 22kHz:

Select from OFF/22K

DiSEqC:

Select from DiSEqC Off, Port A, Port B, Port C, Port D

Configure the satellite settings according to your transponder. Here some helpful hints:

- When receiving high band signals (11,8 – 12, 75 GHz) switch LNB 22 kHz on and LNB Freq 10600
- When receiving low band signals (10, 7 – 11, 75 GHz) switch LNB 22 kHz off and LNB Freq 9750
- When receiving vertical signals the LNB Voltage level is 13 Volt
- When receiving horizontal signals the LNB Voltage level is 18 Volt

- Information about DVB settings at Lyngsat Web site: <http://www.lyngsat.com/>

- Examples for often used transponders on satellite Astra 19.2.E:

Transponder	LNB Freq.(MHZ)	Sat Freq. (MHz)	Symbol Rate (kBaud)	LNB Voltage	LNB 22 kHz	Notes:
TP 71 (ARD)	10600	11836	27500	18 V	on	
TP 77 (ZDF)	10600	11954	27500	18 V	on	
TP 87 (RTL)	10600	12188	27500	18 V	on	
TP 111 (Sky News International)	10600	12603	22000	18 V	on	
TP 107 (SAT.1 - PRO Sieben)	10600	12545	22000	18 V	on	
ARD/ZDF HD	9750	11362	22000	18 V	off	
TP 51 (ARTE)	9750	10744	22000	18 V	off	
TP 104 (TELE 5)	10600	12480	27500	13 V	on	

COFDM Setting

Frequency (MHz):

Local channel frequency

Band Width:

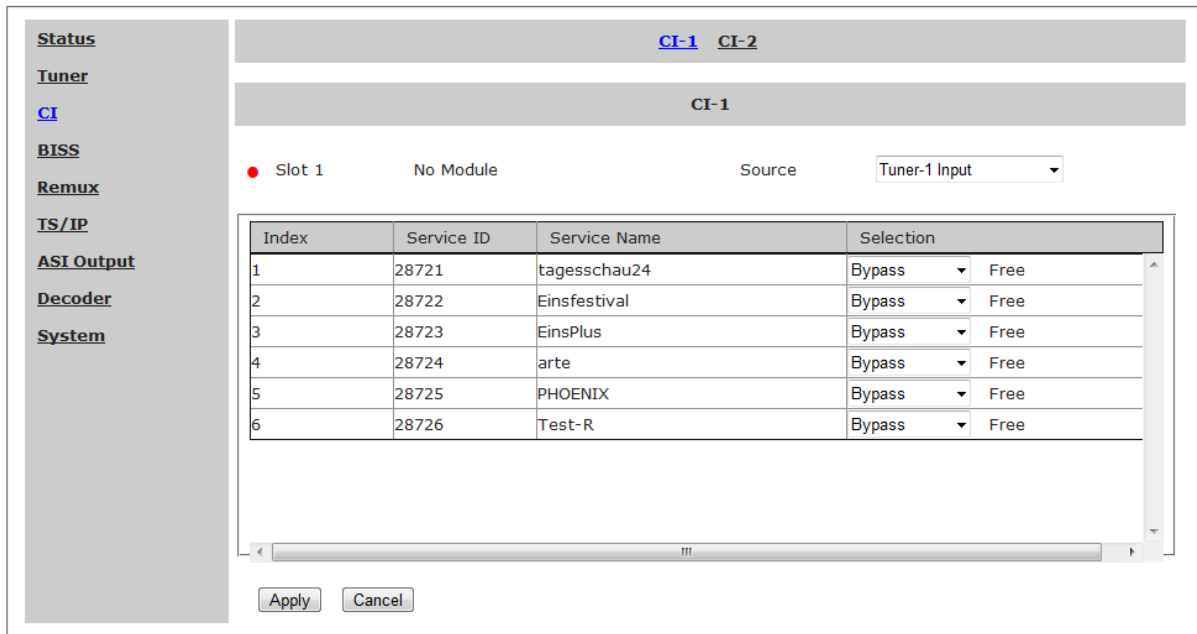
select from 6/7/8MHz

3.3 CI



DMM-220P-S2, Dual DVB to IP Gateway

IP Address: 172.16.124.48



CI-1 or CI2:

Select the CI slot for descramble the program by CAM modules.

Source:

Select from Tuner-1, Tuner-2, IP or MUX TS.

Program column:

Show the program name.

Select column:

Select the channels which you want to descramble. Free means this channel can be received without CAM; Bypass means to skip this channel, this program will be still scrambled;.

3.4 BISS

DMM-220P-S2, Dual DVB to IP Gateway
IP Address: 172.16.124.48

BISS Mode

BISS Mode: Mode 0

BISS Program

BISS Source: Tuner-2 Input

Index	Service ID	Service Name	Selection
1	11110	ZDF HD	Free
2	11130	zdf_neo HD	Free
3	11140	zdf.kultur HD	Free

Apply Cancel

BISS Mode: Select from OFF, Biss E or Biss 1.
 Biss 1: Password is required for Biss 1 setup.
 Biss E: ID and Key are required for Biss E setup.

3.4.1 Output

Digital TV Processor - 192.168.1.165 - Output

Style: White

Output

ASI1 Output
Source: ASI Input

ASI2 Output
Source: IP

Apply Cancel

ASI1 Output
 Source: Select from Tuner, ASI Input, IP, MUX TS, CI Descramble or BISS De-encrypted.

ASI2 Output
 Source: Select from Tuner, ASI Input, IP, MUX TS, CI Descramble or BISS De-encrypted.

3.4.2 MUX

Digital TV Processor - 192.168.1.165 - Mux

Style: White

Output Bit rate:

Set output bit rate.

TS input:

Program list from ASI input. User can click 'Refresh' button to refresh the list.

TS output:

Select output program.

3.4.3 IP Out

Digital TV Processor - 192.168.1.165 - DVB

Style: White

Source:	TS/IP output signal source, select from: Tuner, ASI, CI Descramble.
TS Pkts Per UDP:	Set how many TS packages will be encapsulated in one UDP package. The valid range goes from 1 to 7.
Protocol:	Select from UDP or RTP.
Time to Live:	Set the number of the routers over which the TS over IP can be transmitted. The valid range goes from 1 to 255.
Service type:	Select from Normal, Min Monetary Cost, Max Reliability, Max Throughput and MiniDelay.
Stream IP Address:	IP address of TS/IP output signal source.
Stream Netmask:	Subnet mask of TS/IP output signal source.
Stream Gateway:	Gateway of TS/IP output signal source.
Stream MAC address:	TS/IP output signal source Mac address.
Gateway Mac Address:	Gateway MAC address.
Mode:	Select from DVB and IPTV output

DVB Mode

TS which come from the 'source' selected in previous step will be packed into IP Stream directly. It requires configuring the following parameters.

Digital TV Processor - 192.168.1.165 - IP Out

Style: White

<ul style="list-style-type: none"> Status <u>Tuner</u> CI Decoder Output BISS Mux <u>TS over IP</u> System Backup 	<p style="text-align: center;">IP Out</p> <p>Source: Tuner</p> <p>TS Pkts Per UDP: 7</p> <p>Protocol: UDP</p> <p>Time to Live: 255 (1-255)</p> <p>Type of Service: Normal</p> <p>Stream IP Address: 50 10 80 155</p> <p>Stream Netmask: 255 255 255 0</p> <p>Stream Gateway: 10 10 10 1</p> <p>Stream MAC Address: 00:0e:26:ff:5e:55</p> <p>Gateway MAC Address: ff:ff:ff:ff:ff:ff</p> <p>Mode: DVB Uni/Multicast Setup</p> <p>Apply Cancel</p>
---	---

Multicast/unicast IP:	Multicast or unicast IP address setting.
Target UDP port:	Multicast UDP port number.
Target Mac address:	Set the Mac address of PC at the receiving end in unicast mode.

IPTV Mode

TS which come from the 'source' selected in previous step will be de-muxed to several single programs, and each program is packed into one IP stream.

Digital TV Processor - 192.168.1.48 - IPTV

Style: White

Status

Tuner

CI

Output

Decoder

BISS

Mux

TS over IP

System

Backup

IPTV

TS Input

Tuner (Sum: 0)

Max Channel 1

Switch off

Uni/Multicast IP Address 238.1.1.1

Uni/Multicast UDP Port 1234

Target Mac Address 00:00:12:34:56:78

☐ EIT ☐ TDT/TOT

IP Output

Tuner

>
<

Apply Cancel
Close

Channel Number:
Channel 0~5 (0~32):
Enable:
Multicast/unicast IP:
Target UDP port:
Target Mac Address:
TS input:
IP output:

Select IPTV output channel number ranging from 1~6 (or 1~32).
Select IP output channel to be configured.
Check this option to enable one channel.
Set multicast or unicast IP address.
Set multicast UDP port
In unicast mode, Mac address of the TS reception device
Show program list of signal source.
Select the output program of each channel.

3.4.4 IP In

Digital TV Processor - 192.168.1.165 - IP In

Style: White

<p>Status</p> <p>Tuner</p> <p>CI</p> <p>Decoder</p> <p>Output</p> <p>BISS</p> <p>Mux</p> <p>TS over IP</p> <p>System</p>	<p style="text-align: center;">IP In</p> <p>Uni/Multicast IP Address <input type="text" value="238"/> <input type="text" value="1"/> <input type="text" value="1"/> <input type="text" value="1"/></p> <p>Uni/Multicast UDP Port <input type="text" value="1234"/></p> <p>Stream IP Address <input type="text" value="30"/> <input type="text" value="10"/> <input type="text" value="80"/> <input type="text" value="166"/></p> <p>Stream Netmask <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="0"/></p> <p>Stream Gateway <input type="text" value="10"/> <input type="text" value="10"/> <input type="text" value="40"/> <input type="text" value="1"/></p> <p>Stream MAC Address <input type="text" value="00:0e:26:ff:5e:55"/></p> <p>Protocol UDP</p> <p>Smoothing Auto</p> <p><input type="button" value="Apply"/> <input type="button" value="Cancel"/></p>
---	---

Multicast IP:	Multicast IP address.
Multicast UDP port:	Set Multicast UDP port number.
Stream IP address:	IP address of TS/IP signal source.
Protocol:	Network Protocol including UDP or RTP.
Stream Netmask:	Subnet mask of TS/IP signal source.
Smoothing:	Set smoothing mode, including Auto, Fixed rate, Disable.
Stream Gateway:	Gateway of TS/IP signal source.
Stream MAC address:	Mac address of TS/IP signal source.

3.4.5 Backup

Digital TV Processor - 192.168.1.165 - Backup Style:

[Status](#)

[Tuner](#)

[CI](#)

[Decoder](#)

[Output](#)

[BISS](#)

[Mux](#)

[TS over IP](#)

[System](#)

[Backup](#)

Backup

Main Channel

Backup Channel

Main Channel Unlock Time (s)

Main Channel Recover Time (s)

Main channel:	select main channel from ASI or tuner.
Backup channel:	select backup channel from ASI or tuner.
Main CH Unlock Time:	set Main CH Unlock Time, ranging from 0 to 59 seconds. When signal of the main channel remains the disconnected status over this value, the unit will switch to the backup channel automatically.
Main CH Recover Time:	set Main CH Recover Time, ranging from 0 to 59 seconds. When the signal of the main channel recovers and remains stable over this value, the unit will switch back to the main channel.

3.4.6 Decoder

3.4.6.1 Audio

Digital TV Processor - 192.168.1.165 - Audio

Style:

[Status](#)

[Tuner](#)

[CI](#)

[Decoder](#)

[Output](#)

[BISS](#)

[Mux](#)

[TS over IP](#)

[System](#)

Audio Video Decoder Play

Audio Output

Audio Level

Audio Mode

Audio Priority

SDI Output

Embedded Audio

Audio Output

Audio level:	Audio level, ranging from 0-99.
Audio Mode:	Select from Stereo, Left, Right and Mono
Audio language:	Audio language

SDI Output

Embedded Audio:	On/Off.
-----------------	---------

3.4.6.2 Video

Digital TV Processor - 192.168.1.165 - Video

Style: White ▼

	Audio Video Decoder Play
	Video Output
Status Tuner CI Decoder Output BISS Mux TS over IP System	<div style="margin-bottom: 5px;">Video Standard Auto ▼</div> <div style="margin-bottom: 5px;">Screen Auto ▼</div> <div style="margin-bottom: 5px;">DVB Subtitle Language Off ▼</div> <div style="margin-bottom: 5px;">EBU Subtitle Language Off ▼</div> <div style="margin-bottom: 5px;">Subtitle Priority DVB First ▼</div> <div style="margin-bottom: 5px;">Fail Mode Still Picture ▼</div> <div style="margin-bottom: 5px;">Close Caption OFF ▼</div> <div style="margin-bottom: 5px;">VBI Mode (TTX/CC/WSS) Disable ▼</div> <div style="margin-bottom: 5px;">CVBS SUB PAL PALBDGHI ▼</div> <div style="margin-bottom: 5px;">CVBS SUB NTSC NTSCM ▼</div> <div style="margin-top: 10px;"> Apply Cancel </div>

Video Output

Video Standard:

Select from Auto/1920x1080i 30/1920x1080i 29.97/1920x1080i 25/1280x720p 60/1280x720p 59.97/1280x720p 50/720x480p 59.94/720x480p 60/720x480p 60/720x576p 50/720x576p 25/ Select from Auto, 4:3 Full, 4:3 Letterbox, 16:9 Letterbox or 16:9 Full.

Screen:

Choose DVB Subtitle language.

DVB subtitle language:

Choose EBU Subtitle language.

EBU subtitle language:

Subtitle Priority:

Select from DVB First or EBU First.

Fail Mode:

Select from Black Screen, No Sync and Still Picture.

VBI Mode:

Off/On. VBI option only controls Closed Caption over CVBS. To activate the CC over CVBS, enable the VBI option.

Close Caption:

Off/On. This switch controls both CC on CVBS and SDI.

CVBS Sub PAL:

select PAL mode, including PAL-B/D/G/H/I, PAL-N, PAL-N_C and SECAM.

CVBS Sub NTSC:

select NTSC Mode, including NTSC-M, NTSC-M_J, NTSC-M_443 and PAL-M.

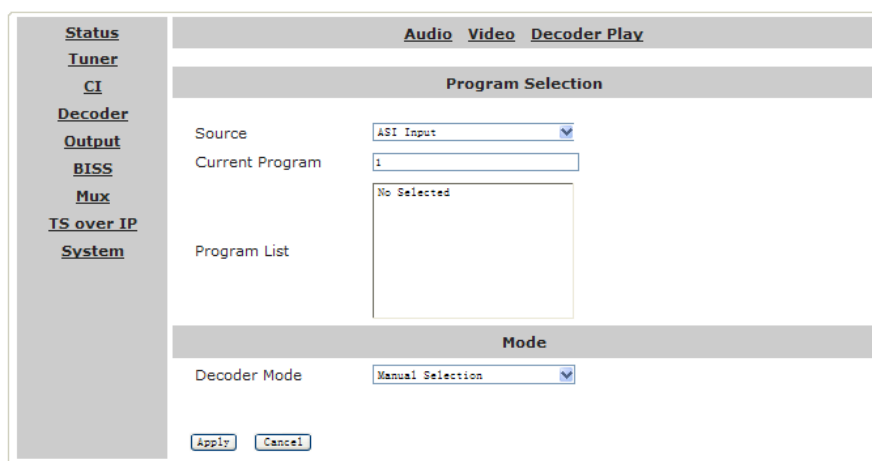
Note:

the sub-menus VBI Mode, CVBS Sub PAL and CVBS Sub NTSC will only show up when the Closed Caption option is on.

3.4.6.3 Decoder Play

Digital TV Processor - 192.168.1.165 - Decoder

Style: White



Source: Select from Tuner, ASI Input, IP, MUX TS, CI Descramble or BISS De-encrypted.

Program: Choose the program need to be played

Mode


Decoder Mode: Select from Manual Selection and First Service. First Service means to select the program no automatically, normally the first program in the TS. Manual Selection means to select the program manually.

3.4.7 System

3.4.7.1 Device

Digital TV Processor - 192.168.1.138 - Device

Style: White 

Status Tuner CI Decoder Output BISS Mux TS over IP System	Device Version Network Login			
	Device Information			
	Unit Name	<input type="text" value="Digital TV Processor"/>		
	Serial Number	<input type="text" value="7a0961221351"/> 		
	Optional Function			
	External Board Type	<input type="text" value="100W Single Out"/>		
	Mux Function	<input type="text" value="Enable"/>		
	Backup Function	<input type="text" value="Disable"/>		
	<input type="button" value="Apply"/> <input type="button" value="Cancel"/>		<input type="button" value="Default"/> <input type="button" value="Reboot"/>	

Device Information


Unit Name: User can edit the unit name.
 Serial Number: The serial number of the unit.

Optional Function

External Board Type: Select from No Exist/IP out/IP in/QAM out.
 Mux Function: Enable/Disable
 Filter Function: Select from Disable/Filter/Mux.

3.4.7.2 Version

Digital TV Processor - 192.168.1.138 - Version

Style: White 

Status Tuner CI Decoder Output BISS Mux TS over IP System	Device Version Network Login			
	Version			
	Main Version	15PR000A	Web Version	0721
	Linux OS Version	29	FPGA Version	20
	ARM S/W Version	65	TS/IP Out NIOS	58
	Decoder Version	62	TS/IP Out FPGA	16

3.4.7.3 Network

Digital TV Processor - 192.168.1.138 - Network

Style: White

	Device	Version	Network	Login
Network				
Target Device				
Device IP	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="1"/> <input type="text" value="138"/>			
Net Mask	<input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="0"/>			
Gateway	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="1"/> <input type="text" value="1"/>			
Mac Address	<input type="text" value="00:0e:26:ff:5e:54"/>			
Alarm Setting				
Trap IP Address	<input type="text" value="50"/> <input type="text" value="10"/> <input type="text" value="70"/> <input type="text" value="66"/>			
NTP				
NTP Server IP	<input type="text" value="10"/> <input type="text" value="10"/> <input type="text" value="10"/> <input type="text" value="10"/>			
NTP Interval(S)	<input type="text" value="600"/>			
Time Zone	<input type="text" value="GMT +1:00"/>			
Time				
Date	<input type="text" value="1970/01/01 (YYYY/MM/DD)"/>			
Time	<input type="text" value="01:35:32 (24H)"/>			
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>				

Network

Target device

Device IP:

Net mask:

Gateway:

MAC Address

Alarm Setting

Trap IP Addr:

IP address of current device.

Network mask

Gateway address

IP address of SNMP target device.

NTP

NTP Server IP:

NTP Interval(s):

Time Zone:

Edit NTP Server IP.

Edit NTP refreshing interval.

Select time zone.

Time

Date:

Time:

Display current date.

Display current time.

3.5 DMM-140 Decoder Module

3.5.1 Status Menu

[Status](#) [Input](#) [Output](#) [CI](#) [IP In/Out](#) [System](#)

DMM-1400P - 192.168.1.63 - Status

Output Status

Normal Video: OK
 Audio: OK

Input Status

ASI	Total Bitrate (Mbps)	<input type="text"/>	Packet Size (Bytes)	<input type="text"/>
	Valid Bitrate (Mbps)	<input type="text"/>		
Tuner	Total Bitrate (Mbps)	<input type="text" value="38.014224"/>	Strength (dBm)	<input type="text" value="-54.0"/>
	Valid Bitrate (Mbps)	<input type="text" value="35.025776"/>	Packet Size (Bytes)	<input type="text" value="188"/>
	C/N (dB)	<input type="text" value="11.0"/>	BER (dB)	<input type="text" value="3.2e-7"/>
	Eb/No (dB)	<input type="text" value="10.0"/>		

Frequency Status Full

Output Status

Video: Video status

Audio: Audio status

Input Status

ASI: ASI input status

Total Bitrate: Total bitrate of ASI input

Packet size: ASI input Packet size

Valid Bitrate: Valid bitrate of ASI input

Tuner: Tuner input status

Total Bitrate: Total bitrate of tuner input

Packet size: Tuner input Packet size

Valid Bitrate: valid bitrate of tuner input

Strength: Tuner input intensity

C/N: Carrier noise of tuner input

BER: Bit error rate of tuner input

Eb/No: Tuner input quality

3.5.2 Input Menu

[Status](#) [Input](#) [Output](#) [CI](#) [IP In/Out](#) [System](#)

DMM-1400P - 192.168.1.231 - Input

QPSK Setting

LNB Freq (MHz)	<input type="text" value="11300"/>
Sat Freq (MHz)	<input type="text" value="12640"/>
Symbol Rate (KBaud)	<input type="text" value="22000"/>
LNB Voltage	<input type="text" value="13V"/>
LNB 22KHz	<input type="text" value="OFF"/>
DisEqc	<input type="text" value="DisEqc OFF"/>

LNB Freq. (MHz):	LNB local oscillator frequency
SatFreq. (MHz):	Satellite down link frequency
Symbol rate (KBaud):	Set Symbol rate
LNB Voltage:	Select from OFF/13V/18V
LNB 22KHz:	Select from OFF/22K
DisEqc:	Select from DisEqc Off, Port A, Port B, Port C, Port D

3.5.3 Output Menu

3.5.3.1 ASI Output

[Status](#) [Input](#) [Output](#) [CI](#) [IP In/Out](#) [System](#)

DMM-1400P - 192.168.1.231 - ASI

[ASI](#) [ASI2/SDI](#) [Decoder Play](#) [Decoder Config](#)

ASI Output

Source	<input type="text" value="Tuner"/>
Packet Size(Byte)	<input type="text" value="Bypass"/>

Source:	Select from Tuner/ASI/CI scramble
Packet Size (Byte):	Bypass/188

3.5.3.2 ASI2/SDI

[Status](#) [Input](#) [Output](#) [CI](#) [IP In/Out](#) [System](#)

DMM-1400P - 192.168.1.231 - ASI2/SDI

[ASI](#) [ASI2/SDI](#) [Decoder Play](#) [Decoder Config](#)

ASI2/SDI Output

Mode ☐ ASI2 ☒ SDI

SDI

Audio DID

Emb Audios

ASI2/SDI Output

Mode: Select from ASI2/SDI

SDI

Audio DID: Select from Group1~4

Emb Audios: Select from None/One/Two/One&Two

3.5.3.3 Decoder Play

[Status](#) [Input](#) [Output](#) [CI](#) [IP In/Out](#) [System](#)

DMM-1400P - 192.168.1.231 - Decoder Play

[ASI](#) [ASI2/SDI](#) [Decoder Play](#) [Decoder Config](#)

Decoder Play

Source

Program Playing

Program List

Source: Select from Tuner, ASI, CI Descramble, IP

Program: Choose the program need to be played

3.5.3.4 Decoder Config

[Status](#) [Input](#) [Output](#) [CI](#) [IP In/Out](#) [System](#)

DMM-1400P - 192.168.1.231 - Decoder Config

[ASI](#) [ASI2/SDI](#) [Decoder Play](#) [Decoder Config](#)

Biss Info

Biss Mode OFF ▼

Video Output

Video Standard Auto ▼

Screen 4:3 Full ▼

DVB Subtitle Lang eng

EBU Subtitle Lang eng

Subtitle Priority DVB First ▼

Fail Mode Black Screen ▼

VBI Mode Enable ▼

Close Caption Off ▼

Audio Output

Audio Level 49 (1-99)

Audio Mode Stereo ▼

Audio Language ▼

Apply Refresh Cancel

Biss

Mode: Select from OFF, Biss E or Biss 1.
Biss 1 Setup: Password is required for Biss 1 setup.
Biss E Setup: ID and Password are required for Biss E setup.

Video Output

Video Standard: Select from Auto, PAL, NTSC and SECAM.
Screen: Select from Auto, 4:3 Full, 4:3 Letterbox or 16:9 Full.
DVB subtitle language: Choose DVB Subtitle language.
EBU subtitle language: Choose EBU Subtitle language.
Subtitle Priority: Select from DVB First or EBU First.
Fail Mode: Select from Black Screen, No Sync and Still Picture.
VBI Mode: Off/On
Close Caption: Off/On

Audio Output

Audio level: Audio level, ranging from 0-99.
Audio Mode: Select from Stereo, Left, Right and Mono
Audio language: Audio language

3.5.4 CI

[Status](#) [Input](#) [Output](#) [CI](#) [IP In/Out](#) [System](#)

DMM-1400P - 192.168.1.63 - CI

CI

Slot 1 No Module Source Tuner ▼

Slot 2 No Module

Index	Program	Select
1	!! CCTV-3	Bypass ▼
2	!! CCTV-5	Bypass ▼
3	!! CCTV-6	Bypass ▼
4	!! CCTV-8	Bypass ▼
5	!! CCTV-少儿	Bypass ▼ Free
6	!! CCTV-新闻	Bypass ▼ Free
7	!! CCTV-9纪录	Bypass ▼

Apply Refresh Cancel

Source:

Select from Tuner or ASI.

Program column:

Show the program name.

Select column:

Select the channels which you want to descramble. Free means this channel can be received without CAM; Bypass means to skip this channel, this program will be still scrambled; Slot 1/Slot 2 means to descramble the program by CAM modules in different CI slots.

3.5.5 IP Out

[Status](#) [Input](#) [Output](#) [CI](#) [IP In/Out](#) [System](#)

DMM-1400P - 192.168.1.63 - IP In/Out

IP Out

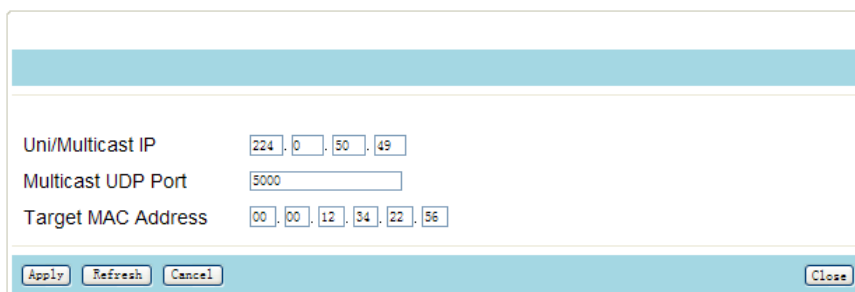
Source	<input type="text" value="Tuner"/>
TS Pkts Per UDP	<input type="text" value="7"/>
Protocol	<input type="text" value="UDP"/>
Time to Live	<input type="text" value="255"/> (1-255)
Type of Service	<input type="text" value="Normal"/>
Stream IP Address	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="50"/> <input type="text" value="99"/>
Stream Netmask	<input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="0"/>
Stream Gateway	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="50"/> <input type="text" value="254"/>
Stream MAC Address	<input type="text" value="00:0e:26:ff:3d:64"/>
Gateway MAC Address	<input type="text" value="ff:ff:ff:ff:ff:ff"/>

Mode

Source:	TS/IP output signal source, select from: Tuner, ASI, CI Descramble.
TS Pkts Per UDP:	Set how many TS packages will be encapsulated in one UDP package. The valid range goes from 1 to 7.
Protocol:	Select from UDP or RTP.
Time to Live:	Set the number of the routers over which the TS over IP can be transmitted. The valid range goes from 1 to 255.
Service type:	Select from Normal, Min Monetary Cost, Max Reliability, Max Throughput and Min Delay.
Stream IP Address:	IP address of TS/IP output signal source.
Stream Netmask:	Subnet mask of TS/IP output signal source.
Stream Gateway:	Gateway of TS/IP output signal source.
Stream MAC address:	TS/IP output signal source Mac address.
Gateway Mac Address:	Gateway MAC address.
Mode:	Select from DVB and IPTV output

DVB Mode

TS which come from the 'source' selected in previous step will be directly packed into IP Stream. It requires configuration of the following parameters.

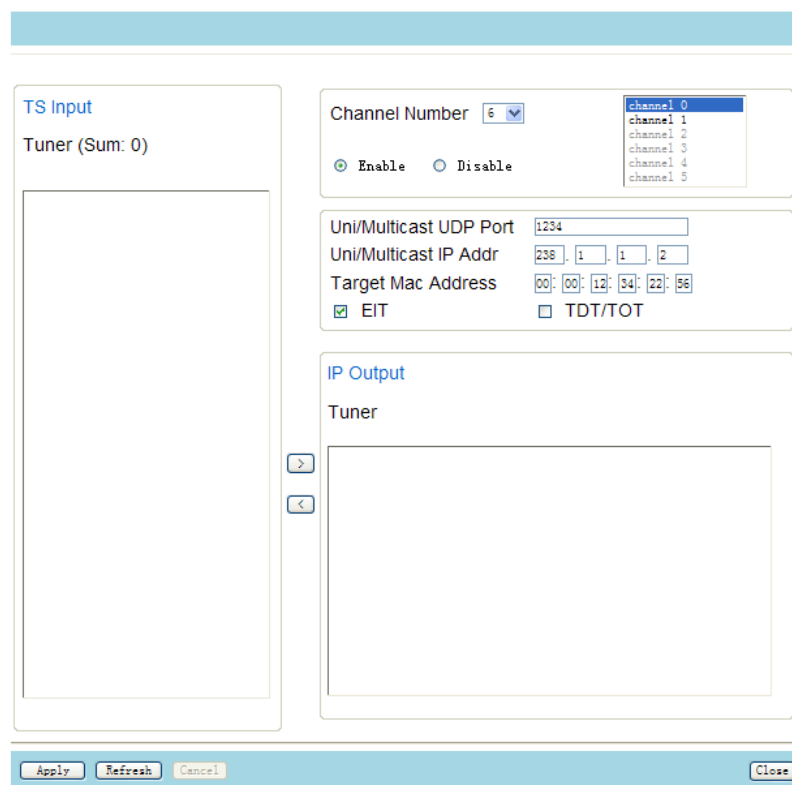


Uni/Multicast IP: 224.0.50.49
 Multicast UDP Port: 5000
 Target MAC Address: 00:00:12:34:22:56
 [Apply] [Refresh] [Cancel] [Close]

Multicast/unicast IP: Multicast or unicast IP address setting.
 Target UDP port: Multicast UDP port number.
 Target Mac address: Set the Mac address of PC at the receiving end in unicast mode.

IPTV Mode

TS which comes from the 'source' selected in previous step will be de-muxed to several single programs, and each program is packed into one IP stream.



TS Input
 Tuner (Sum: 0)
 [Empty list box]

Channel Number 6
☒ Enable ☐ Disable
 [List: channel 0, channel 1, channel 2, channel 3, channel 4, channel 5]

Uni/Multicast UDP Port: 1234
 Uni/Multicast IP Addr: 238.1.1.2
 Target Mac Address: 00:00:12:34:22:56
☒ EIT ☐ TDT/TOT

IP Output
 Tuner
 [Empty list box]
 [>] [<]

[Apply] [Refresh] [Cancel] [Close]

Channel Number: Select IPTV output channel number ranging from 1~6 (or 1~32).
 Channel 0~5 (0~32): Select IP output channel to be configured.
 Enable: Check this option to enable one channel.
 Multicast/unicast IP: Set multicast or unicast IP address.
 Target UDP port: Set multicast UDP port
 Target Mac Address: In unicast Mode, Mac address of the TS reception device
 TS input: Show program list of signal source.
 IP output: Select the output program of each channel.

3.5.6 IP In

[Status](#) [Input](#) [Output](#) [CI](#) [IP In/Out](#) [System](#)

DMM-1400P - 192.168.1.63 - IP In/Out

IP In

Multicast IP Address	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>
Multicast UDP Port	<input type="text" value="3000"/>
Stream IP Address	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="80"/> <input type="text" value="99"/>
Stream Netmask	<input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="0"/>
Stream Gateway	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="80"/> <input type="text" value="254"/>
Stream MAC Address	<input type="text" value="00:0e:26:ff:3d:64"/>
Protocol	<input type="text" value="UDP"/>
Smoothing	<input type="text" value="Auto"/>
TS Bit Rate(Kbps)	<input type="text" value="38000"/>

Multicast IP:	Multicast IP address.
Multicast UDP port:	Set Multicast UDP port number.
Stream IP:	IP address of TS/IP signal source.
Protocol:	Network protocol including UDP or RTP.
Stream Netmask:	Subnet mask of TS/IP signal source.
Smoothing:	Set smoothing mode, including Auto, Fixed rate, Disable.
Stream Gateway:	Gateway of TS/IP signal source.
TS Bit Rate:	Input Bit rate.
Stream MAC address:	Mac address of TS/IP signal source.

3.5.7 System

[Status](#) [Input](#) [Output](#) [CI](#) [IP In/Out](#) [System](#)

DMM-1400P - 192.168.1.63 - System

Device Info

Unit Name
Serial Number 00000000

Version

Main Version	14PR0017	WEB Version	0103
Linux OS Version	05	ARM S/W Version	37
Decoder Version	61	FPGA Version	44
TS/IP Out NIOS	58	TS/IP Out FPGA	1a

Network

Target Device
IP Address
Subnet Mask
Gateway
Mac Address 00:0e:26:ff:3d:63

Alarm Setting

Trap IP Address

Optional Function

External Board Type
Filter Function

Machine Type

Input Type
Stream MAC Address 00:0e:26:ff:3d:64
Watch Dog Switch

Device Info

Unit Name: User can edit the unit name.
Serial Number: The serial number of the unit.

Version

Main Version
WEB Version
Linux OS Version
ARM S/W Version
Decoder Version
FPGA Version
TS/IP Out NIOS
TS/IP Out FPGA

Network

Target device
IP Address: IP address of current device.
Subnet mask: Network mask
Gateway: Gateway address

Alarm Setting

Trap IP Addr: IP address of SNMP target device.

Optional Function

External Board Type: Select from No Exist/IP out/IP in/QAM out.
Filter Function: Select from Disable/Filter/Mux.

Machine Type

Input Type: Select from None/DVB-S/DVB-S2/DVB-T/DVB-C/DS3/auto.
Stream MAC Address: MAC address of the IP board.
Watch Dog Switch: Enable/Disable.

4. Control advanced settings with HDMS

Since Firmware 22PR0034 you could change some advanced settings with HDMS Version 3.03 or higher.

4.1 Installation

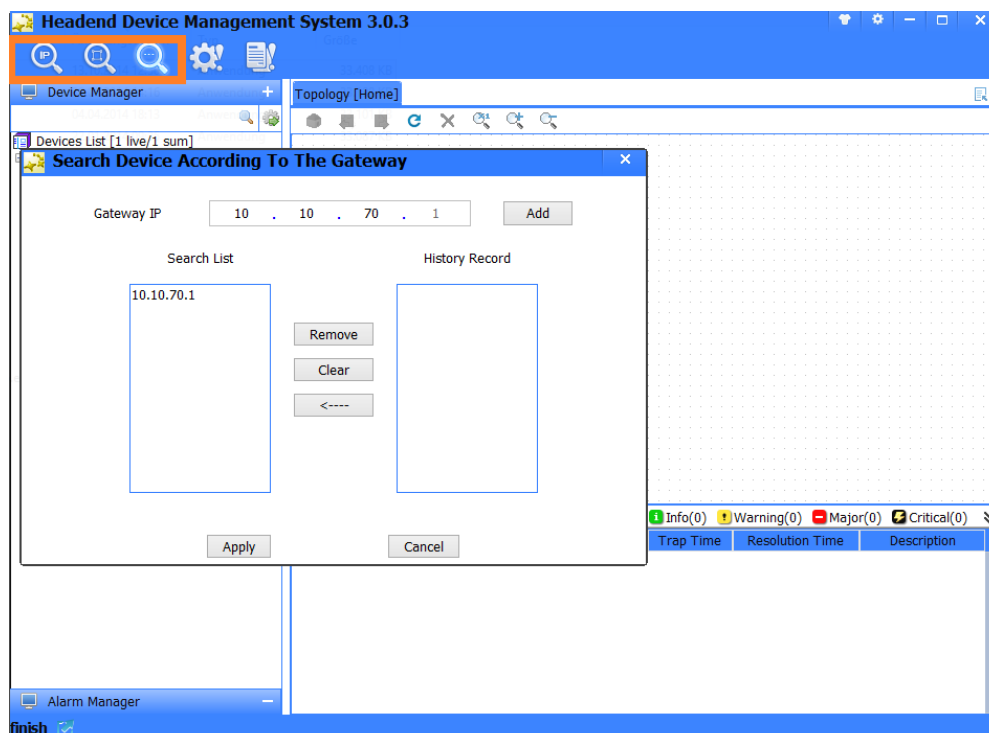
- Install HDMS on your computer.
- After start of HDMS a Logon screen appear.
Please enter following credentials:
User: hdms
Password: hdms
And choose the right Network Interface.



4.2 Search your Devices

Search your devices with one of the following methods:

- IP Address
- A complete IP Range
- Gateway IP



4.3 Open Configuration

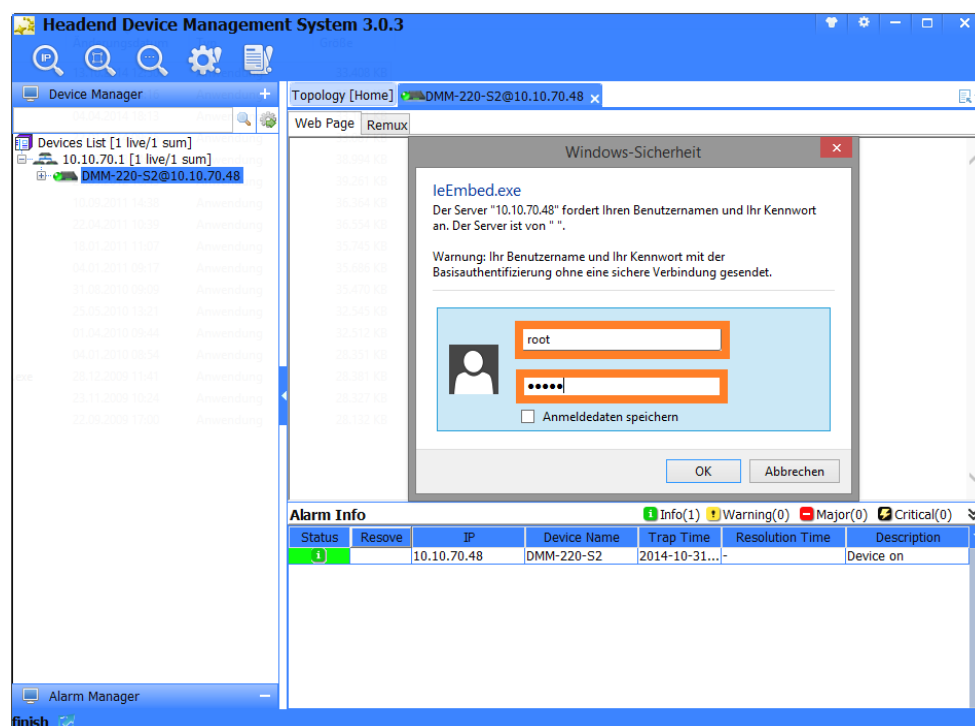
After successfully discovered devices you can open the configuration with double-click on the Device. You are prompt for the login credentials. Enter the same you are use in the Browser, please see chapter 3. Default:

Username: root

Password: 12345

After Login you have the Tab for Web Page and Remux.

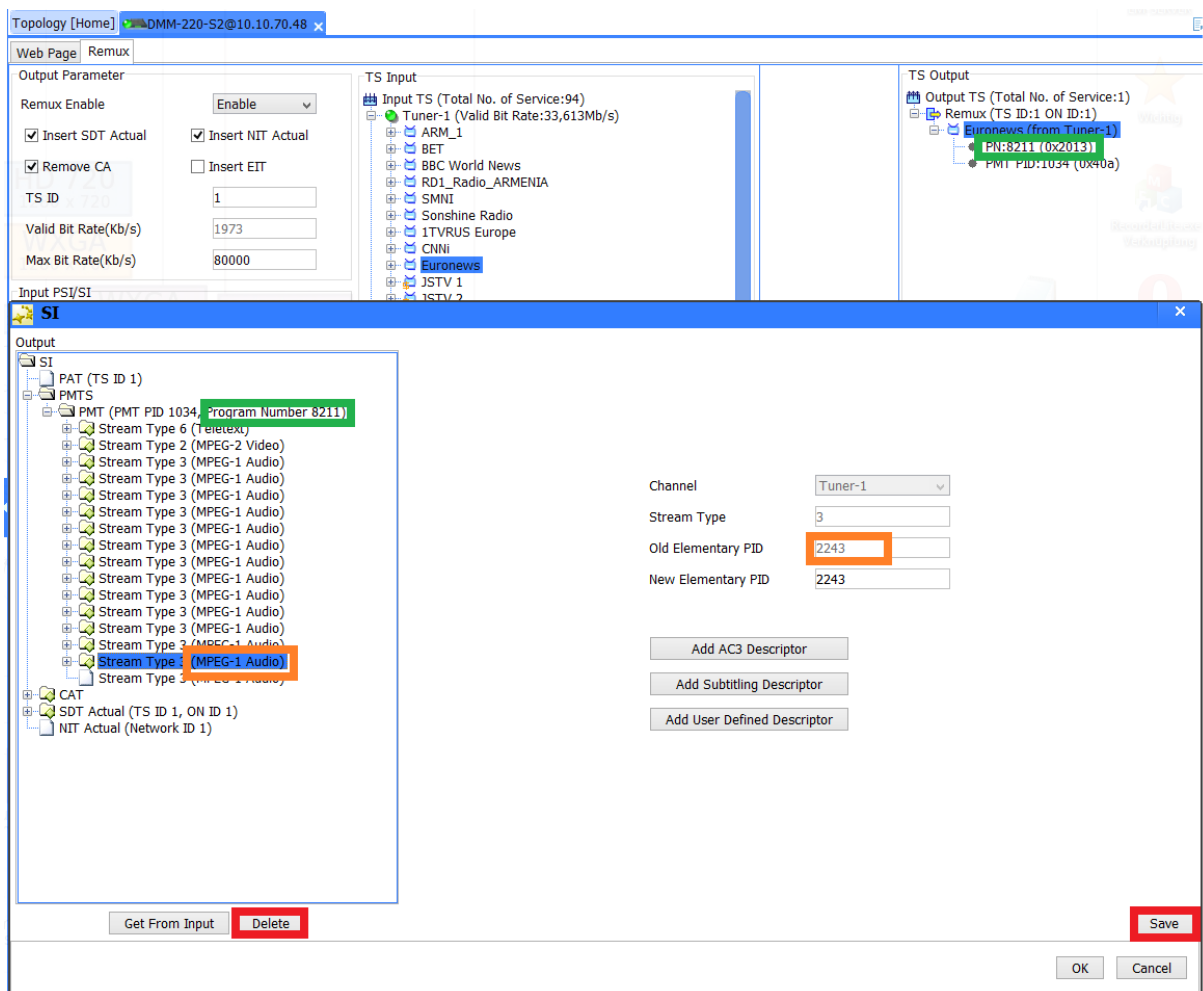
..! When you use the Remux from HDMS you should not configure anything inside the Remux of the Web Page.



4.4 Delete unneeded PID's from your Channel.

In some cases you do not need all the PID from your TV Channel maybe you want to delete unneeded Audio PID's or HBBT (Private) PID, to do so please do following:

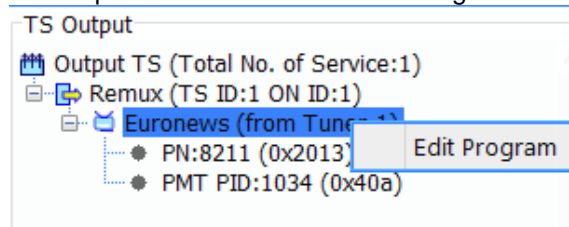
- After changing settings in the Web Page press the refresh Button on the Remux Tab.
- Choose your Channel from the TS Input source and send it to the TS Output with the arrow button.
- Click Apply
- Click Refresh
- Click Edit PSI//SI
- Identify your Program with the Program Number (marked green)
- Identify the PID you want to delete (marked orange) you could use the output with Programs like VLC or TS reader or you take the information's from some Website like <http://www.lyngsat.com>.
- Delete all unneeded and save (red marked)
- Click Apply
- Click Refresh
- Add the changed Channel in you TS/IP output like described in Chapter 3.4.1



4.5 Create several Output from same Input

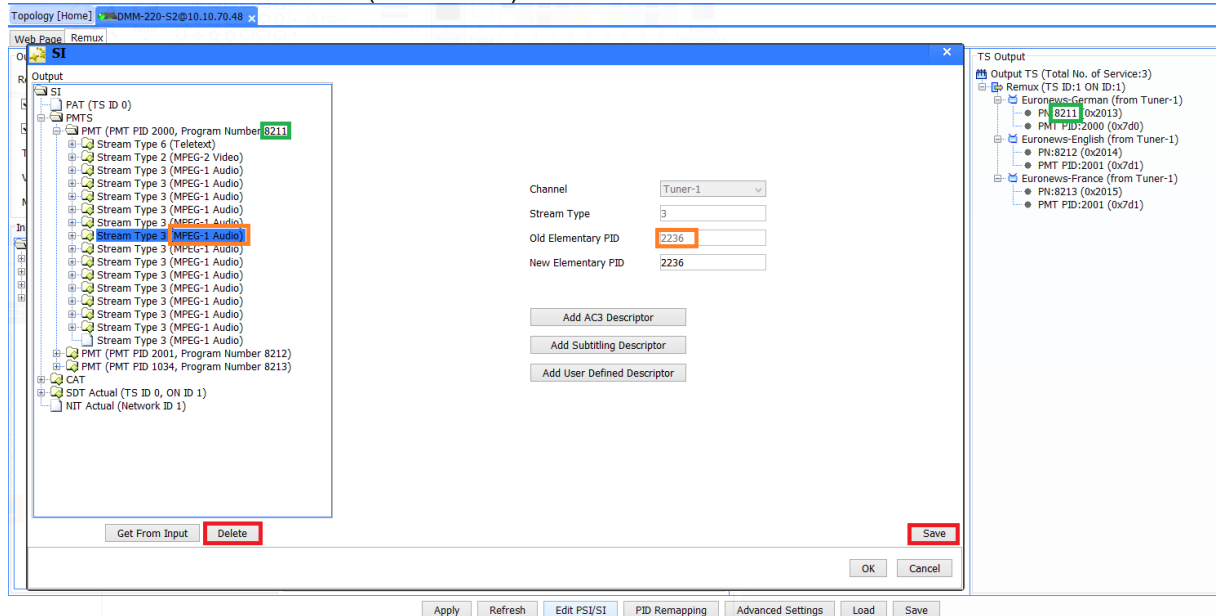
When you want to make several new Channels from same input, for Example make TV channels with always different Audio PID`s.

- After changing settings in the Web Page press the refresh Button on the Remux Tab.
- Choose your Channel from the TS Input source and send it to the TS Output with the arrow button.
- Right Click on the new TS Output Channel and click Edit Program



- Edit Service name to identify the Program later in TS/IP
- Change the PMT PID to a new unique one.

- Click OK
- Repeat Step b) to f) until you have all wanted channels
- Click Edit PSI/SI
- Identify the PID you want to delete (marked orange) you could use the output with Programs like VLC or TS reader or you take the information's from some Website like <http://www.lyngsat.com>.
- Delete all unneeded and save (red marked)



- Click Apply
- Click Refresh
- Add the changed Channel in you TS/IP output like described in Chapter 3.4.1

4.6 Prepare a TV Channel with Dynamic PID's

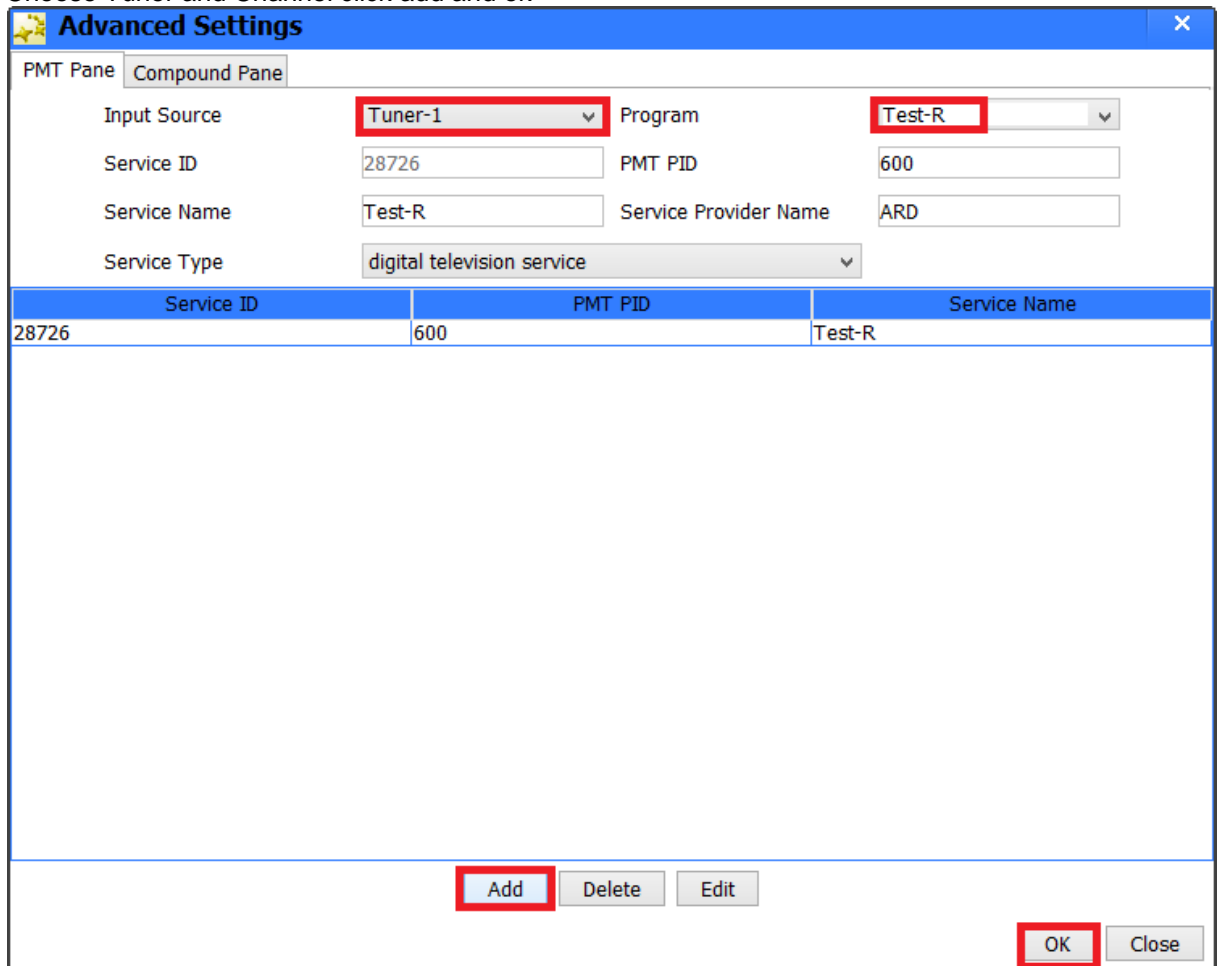
There are TV channels with dynamic PID's often use in Europe for regional news.

To a special time there will be added video or audio PID's for a short time and the PMT would be updated with the changed PID's.

You could prepare the output that it is switching to the new Video/Audio PID's.

This configuration will always have included all PID's the current and the following.

- After changing settings in the Web Page press the refresh Button on the Remux Tab.
- Click Advanced Settings
- Choose Tuner and Channel click add and ok



Service ID	PMT PID	Service Name
28726	600	Test-R

- You have the Test-R now on the TS-Output
- Click PID Remapping and add the PMT PID the current Video and Audio PID's and the following PID's, and click OK.

Channel	PID In	PID Out
Tuner-1	600	600
Tuner-1	401	401
Tuner-1	402	402
Tuner-1	501	501
Tuner-1	502	502

Buttons: Add, Delete, Edit, OK, Close

- f) Click Apply
- g) Go to the Web Page Tab open the TS/IP Uni/Multicast Setup
- h) Add your Dynamic Channel to the TS/IP output
- i) Add also here all PID`s you have entered by the PID Remapping
- j) Click apply and close

..! configure the Dynamic Channel at last, because with click apply you add the Output PID`s to all channels.

IPTV

TS Input
Remux (Total No. of Service: 1)

☐ Test-R

TS/IP Output
Remux

☐ Test-R

channel 0
channel 1
channel 2
channel 3
channel 4
channel 5

Max Channel: 32

Switch: on

Uni/Multicast IP Address: 238.1.48.1

Uni/Multicast UDP Port: 4444

Target Mac Address: 00:00:12:34:22:56

☐ SDT ☐ CAT ☐ EIT ☐ TDT/TOT

Output PID Filter

502
501
402
401
600

Buttons: Apply, Cancel, Add, Delete, Close

4.7 Prepare a TV Channel with Dynamic PID's for recording.

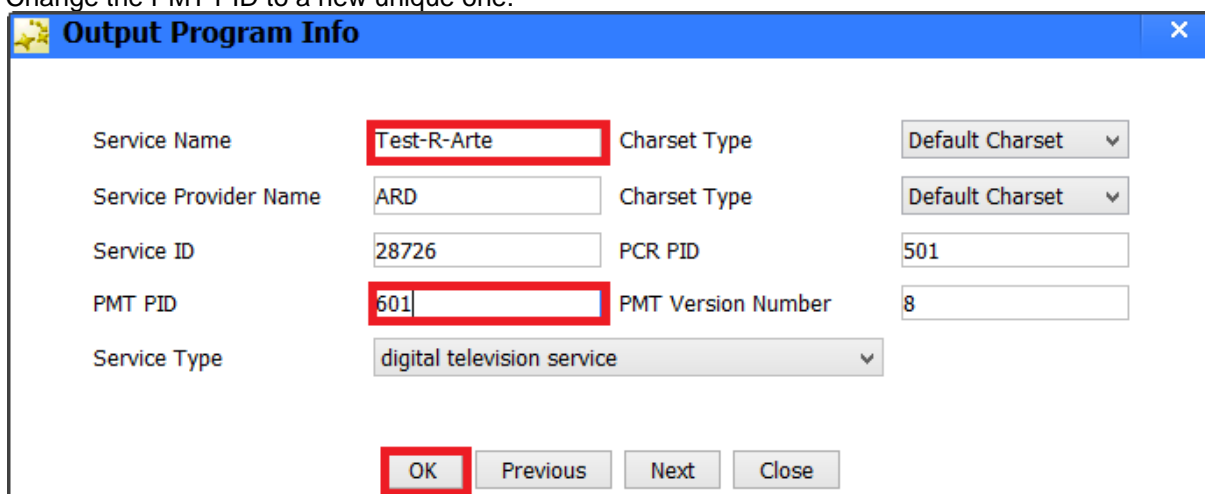
There are TV channels with dynamic PID's often use in Europe for regional news.

To a special time there will be added video or audio PID's for a short time and the PMT would be updated with the changed PID's.

This configuration is special for recording. As opposed to chapter 4.7 it do not have Ghost PID's but would have only Signal in case of the changed PID's.

As result you have 2 different non dynamic Channels.

- After changing settings in the Web Page press the refresh Button on the Remux Tab.
- Choose your Channel from the TS Input source and send it to the TS Output with the arrow button
- Right Click on the new TS Output Channel and click Edit Program
- Edit Service name to identify the Program later in TS/IP
- Change the PMT PID to a new unique one.



Service Name	Test-R-Arte	Charset Type	Default Charset
Service Provider Name	ARD	Charset Type	Default Charset
Service ID	28726	PCR PID	501
PMT PID	601	PMT Version Number	8
Service Type	digital television service		

OK Previous Next Close

- Click OK
- Click Apply
- The Remuxer Tab is reading the TS Input information only once as long they haven't changed. So after the Channel have switched to the new PID's you have to cause the Tuner to tune again. You could do so either with unplug the RF Input Cable or change the Tuner Input setting to a different one, e.g. LNB LO Frequency from 9750 to 975 for 10 seconds and back.
- Repeat Step b) to f)
- Add the changed Channel in you TS/IP output like described in Chapter 3.4.1

4.8 Restrictions and useful hints.

- When using the Remuxer on HDMS do not use the Remuxer from Web Page.
- While configuring the Remuxer it is very helpful to set no output to remuxer until the remuxer configuration is finished.
- When using Dynamic PID's configuration like in chapter 4.7 you could not delete unneeded PID's, like additional Audio or Teletext.
- When using Dynamic PID's configuration like in chapter 4.7 you could only use one Tuner.
- Configure the Dynamic Channel at last, because with click apply on the TS/IP Web Page you add the Output PID's to all channels.

5. Technical Specification

5.1 DMM-140 Series

Tuner Input	
DVB-S/S2 Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input Frequency Range	950 ~ 2150MHz
Input Level	-25 ~ -65dBm
Symbol Rates	DVB-S QPSK: 5 ~ 45MS/s; DVB-S2 8PSK 10~31MS/s
Roll-off Factor	DVB-S QPSK: 0.35; DVB-S2 8PSK: 0.35, 0.25, 0.2
FEC Code Rate	DVB-S2 8PSK: 2/3, 3/4, 3/5, 5/6, 8/9, 9/10 DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 6/7, 7/8
LNB Polarization	0, 13V, 18V selectable
LNB Band Switching Tone	0/22kHz selectable
DVB-S Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input Frequency Range	950 ~ 2150MHz
Input Level	-25 ~ -65dBm
Symbol Rates	2 ~ 45MS/s
Roll-off Factor	0.35
Puncture Rates	1/2, 2/3, 3/4, 5/6, 7/8
LNB Polarization	0, 13V, 18V selectable
LNB Band Switching Tone	0/22kHz selectable
DVB-C Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input Frequency Range	48 ~ 860MHz
Symbol Rates	1 ~ 7MS/s (ITU J.83 Annex A)
Constellation	64/128/256 QAM
Input Level	-15 ~ 15dBmV
Bandwidth	6/7/8MHz
Input Return Loss	7dB (typ.)
DVB-T Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input Frequency Range	174 ~ 230MHz (VHF); 470 ~ 860MHz (UHF)
Input Level	-20 ~ -70dBm
Constellation	QPSK, 16-QAM, 64-QAM
Carrier bandwidth	6/7/8 MHz
FTT Mode	2K/8K
Guard Interval	1/4, 1/8, 1/16, 1/32
FEC Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
ASI Input	
Connector	1 x BNC Female, 75Ω
Standard	DVB-ASI, EN50083-9
Input Bit Rates	≤ 100Mb/s
Package Length	188 or 204 Bytes
TS over IP	
Connector Type	1 x RJ45, 10/100M for TS/IP
Useful bit rate	70Mb/s for 10/100M
Protocol	UDP / RTP, Multicast / Unicast, IGMPv2, ARP

TS Processing	
TS Input Management	Remux and demux between Tuner, ASI and TS/IP Inputs
TS Output Management	Remux and demux for 2 mirror ASI outputs
Service and PID management	Remux, filtering and remapping
PSI/SI	PSI/SI table regeneration, NIT and SDT edition, LCN Edition and Re-generation
Descrambler	DVB Common Scrambling Algorithm (CSA)
Common Interface	Double PCMCIA slots, compatible with major CA CAMs in the market
ASI Output	
Connector Type	2 x BNC Female, 75Ω (one connector is shared with SDI output)
Standard	DVB-ASI, EN50083-9
Output Bit Rates	≤ 99Mb/s
Digital Video Processing	
Video Standard	MPEG-2(MP@ML)
SDI Video Resolution	576i x 25, 480i x 29.97
Video Bit Rate	< 80Mb/s
SD-SDI Output	
Connector Type	1 x BNC Female, 75Ω (share with one of the two ASI outputs)
Serial Interface	SMPTE 259M, 270 Mb/s (10bit)
Level	800mV p-p
Audio Embedded	Yes
Digital Audio Processing	
Number of Outputs	1 pair of stereo audio output (1 Audio PID is decoded)
Analog Video Output	
CVBS Connector	1 x 2.5mm phone jack (with phone jack to RCA adaptor)
Video Standard	NTSC, PAL, and SECAM
Analog Audio Output	
Connector Type	1 x 2.5mm phone jack for CVBS and stereo audio
Number of Outputs	1 pair of stereo audio
Control & Monitoring	
Connector Type	1 x RJ45, 10/100M, for equipment IP Control
Remote Control	SNMP, HTTP Web, Proprietary HDMS Network System Management Software
Local Control	Handheld Programmer Unit
Software Upgrade	FTP loader

5.2 DMM-150 Series

Tuner Input	
DVB-S/S2 Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input Frequency Range	950 ~ 2150MHz
Input Level	-25 ~ -65dBm
Symbol Rate	5 ~ 45MS/s for QPSK 10 ~ 31MS/s for 8PSK
Rolling-off Factor	DVB-S QPSK: 0.35 DVB-S2 8PSK: 0.35, 0.25, 0.2
Punctured Rates	DVB-S QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 8/10 DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
LNB Polarization	0, 13V, 18V selectable
LNB Band Switching Tone	0/22kHz selectable
DiSEqC	DiSEqC 1.0
DVB-C Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input frequency	48 ~ 860MHz
Input level	45 ~ 75dBuV
Symbol rate	1 ~ 7MS/s (ITU J.83 Annex A)
Constellation	64/128/256QAM
Bandwidth	6/7/8MHz
Input return loss	7dB (typ.)
DVB-T/T2 Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input frequency	104 ~ 862MHz (VHF/UHF)
Input level	-20 ~ -70dBm (Quasi Error Free, QEF)
Constellation	DVB-T: QPSK/16-QAM/64-QAM DVB-T2: QPSK, 16QAM, 64QAM, 256QAM
Bandwidth	6MHz/7MHz/8MHz
FFT mode	DVB-T: 2K/8K DVB-T2: 1K, 2K, 4K, 8K, 16K, 32K
Guard interval	DVB-T: 1/4, 1/8, 1/16, 1/32 DVB-T2: 1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128
FEC code rate	DVB-T: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-T2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Input return	7dB (typ.)
ASI Input	
Connector Type	2 x BNC Female, 75Ω
Standard	DVB-ASI, EN50083-9
Input Bit Rates	≤ 100Mb/s
Package Length	188 or 204 Bytes
TS Processing	Re-multiplexing of 2 ASI Inputs
TS over IP	
Connector Type	1 x RJ45, 10/100M for TS/IP
Useful bit rate	70Mb/s for 10/100M
Protocol	UDP / RTP, Multicast / Unicast, IGMPv2, ARP

TS Processing	
TS Input Management	Remux and demux between Tuner, ASI and TS/IP Inputs
TS Output Management	Remux and demux for 2 independent ASI outputs
Service and PID management	Remux, filtering and remapping
PSI/SI	PSI/SI table regeneration, NIT and SDT edition, LCN Edition and regeneration
Descrambler	DVB Common Scrambling Algorithm (CSA)
BISS Mode	BISS-1, BISS-E
Common Interface	Double PCMCIA slots, compatible with major CA CAMs in the market
ASI Output	
Connector Type	2 x BNC Female, 75Ω
Standard	DVB-ASI, EN50083-9
TS Processing	2 Independent TS Re-multiplexing from tuner, TS/IP and 2 ASI inputs
HDMI Output	
Standard HDMI	1x HDMI 1.3 interface (partial)
Video Resolution	1080i x 30, 1080i x 29.97, 1080i x 25, 720p x 60, 720p x 59.94, 720p x 50, 480p x 60, 576p x 50, 576i x 25, 480i x 29.97
Embedded	Digital Audio Loop Through
Digital Video Processing	
Video Standard	MPEG-2(MP@ ML for SD, MP@HL for HD) MPEG 4/H.264 Part 10 (MP@L3 for SD, HP@L4.1 for HD)
SDI Video Resolution	1080i x 30, 1080i x 29.97, 1080i x 25, 720p x 60 720p x 59.94, 720p x 50, 576i x 25, 480i x 29.97
Video Bit Rate	< 80Mb/s
SD-SDI Output	
Connector Type	2 x SD-SDI outputs in mirror, BNC Female, 75Ω
Serial Interface	SMPTE 259M, 270 Mb/s (10bit)
Level	800mV p-p
HD-SDI Output	
Connector Type	2 HD-SDI outputs in mirror, BNC Female, 75Ω
Serial Interface	SMPTE 292M, 1.485 Gbit/s (10bit)
Level	800mV p-p
Digital Audio Processing	
Number of Outputs	2 pairs of audio outputs (2 Audio PIDs are decoded)
Analog Video Output	
YPbPr Connector	1 x 2.5mm phone jack, 75Ω (phone jack to RCA adaptor)
CVBS Connector	1 x 2.5mm phone jack, 75Ω (phone jack to RCA adaptor)
Video Standard	NTSC, PAL, and SECAM
YPbPr Resolution	1080i x 30, 1080i x 29.97, 1080i x 25, 720p x 60, 720p x 59.94, 720p x 50, 480p x 60, 576p x 50, 576i x 25, 480i x 29.97
Signal Level	1.0 Vp-p±5%
Frequency Response	< ±1 dB at 5.5 MHz
Chroma-Luma Delay	< ±30 ns
Field Time Distortion	< 2%
Line Time Distortion	< 1%
Short Time distortion	< 2%
Differential Gain	< 4%
Differential Phase	< 2°
Signal to Noise Ratio	> 55 dB (luminance weighted)
Analog Audio Output	
Connector type	1 x 2.5mm phone jack, 75Ω (phone jack to RCA adaptor)
Output mode	Left, Right, Dual Mono, Stereo
Number of Outputs	2 pairs of audio outputs (2 Audio PIDs are decoded).

Baseband Data Output	
Subtitle	DVB/EBU
VBI	Teletext, WSS, VFD, VPS
Closed Caption	EIA 608, EIA 708, EIA 608-to-708
Redundancy	
Redundancy Port	between Tuner, 2 x ASI inputs and TS/IP
Switching Condition	TS Sync Loss
Switching Mode	Main, Spare
Control & Monitoring	
Connector Type	1xRJ45, 10/100M, for equipment IP Control
Remote Control	SNMP, HTTP Web, Proprietary HDMS Network System Management Software
Local Control	Handheld Programmer Unit
Equipment Upgrade	FTP loader

5.3 DMM-130 TM Series

Tuner Input	
DVB-S/S2 Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input Frequency Range	950 ~ 2150MHz
Input Level	-25 ~ -65dBm
Symbol Rates	DVB-S QPSK: 5~45MS/s;
Roll-off Factor	DVB-S QPSK: 0.35; DVB-S2 8PSK: 0.35, 0.25, 0.2
Puncture Rates	DVB-S2 8PSK: 2/3, 3/4, 3/5, 5/6, 8/9, 9/10 DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 6/7, 7/8
LNB Polarization	0, 13V, 18V selectable
LNB Band Switching Tone	0/22kHz selectable
DVB-S Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input Frequency Range	950 ~ 2150MHz
Input Level	-25 ~ -65dBm
Symbol Rates	2 ~ 45MS/s
Roll-off Factor	0.35
Puncture Rates	1/2, 2/3, 3/4, 5/6, 7/8
LNB Polarization	0, 13V, 18V selectable
LNB Band Switching Tone	0/22kHz selectable
DVB-C Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input Frequency Range	48 ~ 860MHz
Symbol Rates	1 ~ 7MS/s (ITU J.83 Annex A)
Constellation	64/128/256 QAM
Input Level	-15 ~ 15dBmV
Bandwidth	6/7/8MHz
Input Return Loss	7dB (typ.)
DVB-T Tuner Input	
Connector Type	1 x F type female 75Ω for Input, 1 x F type female 75Ω for loop through output
Input Frequency Range	174 ~ 230MHz (VHF); 470 ~ 860MHz (UHF)
Input Level	-20 ~ -70dBm
Constellation	QPSK, 16-QAM, 64-QAM
Carrier bandwidth	6/7/8 MHz
FTT Mode	2K/8K
Guard Interval	1/4, 1/8, 1/16, 1/32
FEC Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
ASI Input	
Connector	1 x BNC Female, 75Ω
Standard	DVB-ASI, EN50083-9
Input Bit Rates	≤ 100Mb/s
Package Length	188 or 204 Bytes
TS Processing	
TS Input Management	Remux and demux between Tuner and ASI Inputs
Service and PID management	Remux, filtering and remapping
PSI/SI	PSI/SI table regeneration, NIT and SDT edition, LCN Edition and regeneration
ASI Output	
Connector Type	1 x BNC Female, 75Ω
Standard	DVB-ASI, EN50083-9

TS Processing	2 mirror TS Re-multiplexing from Tuner and ASI inputs
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DVB-C Re-Modulation

Constellation	J.83 Annex A: 16/32/64/128/256QAM; J.83 Annex B: 64/256QAM
Symbol Rate	3 ~ 7.2MS/s
I/Q Amplitude Error	< 0.3%
I/Q Phase Error	< 0.3°
Phase jitter	< 0.5°RMS
MER	> 35dB

DVB-T Re-Modulation

Constellation	QPSK/16QAM/64QAM
Bandwidth	5/6/7/8MHz
FFT Mode	2K
Guard Interval	1/4, 1/8, 1/16, 1/32
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8

RF Output

Connector Type	F type female, 75Ω
Output Frequency Range	48 ~ 860MHz agile, step by 10 kHz
Output Level	97 ~ 110dBμV, step by 1dBμV
MER	> 36.5dB
Spurious Rejection	55dB (typ.)
Output Return Loss	12dB (typ.)

Control & Monitoring

Connector Type	1 x RJ45, 10/100M, for equipment IP Control
Remote Control	SNMP, HTTP Web, Proprietary HDMS Network System Management Software
Local Control	Handheld Programmer Unit
Software Upgrade	FTP loader

5.4 DMM-130 MX Re-multiplexer Module

ASI Input	
Connector Type	8 x BNC Female, 75Ω
Input bit rate	≤ 100Mb/s
Data transmission mode	BYTE or BURST mode auto-detection
Packet Length	188 /204 bytes, auto-detection
ASI Output	
Connector Type	2 x BNC Female, 75Ω
Output bit rate	≤ 99Mb/s
Data transmission mode	Byte
Packet Length	188 or 204 Bytes
Signal Level	800mVpp±10%
Control & Monitoring	
Connector Type	1xRJ45, 10/100M, for equipment IP Control
Remote Control	SNMP, Proprietary HDMS network Management Software
Local Control	Handheld Programmer Unit
Software Upgrade	FTP loader

5.5 DMM-130 TP

ASI Input	
Connector Type	2 x BNC Female, 75Ω
Input Bit Rate	≤ 60Mb/s
Packet Mode	188/204 Bytes
TS Processing	
Scrambler Type	DVB Common Scrambling
Scrambler Mode	BISS-1, BISS-E and Simulcrypt
EMM/ECM Number	48 Max
EMM/ECM Port	RJ-45, UDP/TCP
ASI Output	
Connector Type	2 x BNC Female, 75Ω, ISO13818-1
Output Bit Rate	1-54Mbps adjustable
Packet Mode	188/204 Bytes
Control & Monitoring	
Connector Type	1xRJ45, 10/100M, for equipment IP Control
Remote Control	SNMP, HTTP Web
Local Control	Handheld Programmer Unit
Software Upgrade	FTP Loader

6. FAQ

6.1 What is a “good” input signal for satellite reception?

Strength:	the range is -25 ~ -65dBm, the more large value is better within this range, like: -30dBm is better than -25dBm
C/N and Eb/N0:	the more large value is better, C/N reference value: 9.5dB, Eb/N0 reference value: 6.4dB, could receive a good signal
BER:	the lower value is better, BER reference value 0.0E-8 and 0.0E-9, could receive a good signal

7. Statement of Conformity DMM-140-Series



state that our products, where they bear the CE marking illustrated above, are in conformity with the following standards:

EN 50083-2:2001	Electromagnetic compatibility for equipment – Cabled distribution systems for television and sound signals.
EN 61000-3-2:2006	Electromagnetic compatibility Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase).
EN 61000-3-3:2008	Electromagnetic compatibility Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection.

This regards to the following Teracue products:

DMM-100-FR
DMM-140-S2
DMM-140-C
DMM-140-T

Designed, developed and manufactured to conform with the:

- Directive EMC 2004/108/EC Electromagnetic Compatibility

8. Statement of Conformity DMM-150-Series



state that our products, where they bear the CE marking illustrated above, are in conformity with the following standards:

EN 50083-2:2006	Electromagnetic compatibility for equipment – Cabled distribution systems for television and sound signals.
EN 61000-3-2:2006 + A1:2009 + A2:2009	Electromagnetic compatibility Limits – Limits for harmonic current emissions (equipment input current \leq 16 A per phase).
EN 61000-3-3:2008	Electromagnetic compatibility Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current \leq 16 A per phase and not subject to conditional connection.

This regards to the following Teracue products:
DMM-100-FR, DMM-100-FR-1RU
DMM-150-S2, DMM-150-C, DMM-150-T, DMM-150-T2

Designed, developed and manufactured to conform with the:
- Directive EMC 2004/108/EC Electromagnetic Compatibility

9. Statement of Conformity DMM-220-Series



state that our products, where they bear the CE marking illustrated above, are in conformity with the following standards:

EN 50083-2:2006	Electromagnetic compatibility for equipment – Cabled distribution systems for television and sound signals.
EN 61000-3-2:2006 + A1:2009 + A2:2009	Electromagnetic compatibility Limits – Limits for harmonic current emissions (equipment input current \leq 16 A per phase).
EN 61000-3-3:2008	Electromagnetic compatibility Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current \leq 16 A per phase and not subject to conditional connection.

This regards to the following Teracue products:
DMM-100-FR, DMM-100-FR-1RU
DMM-220-S2, DMM-220-T/T2/C

Designed, developed and manufactured to conform with the:
- Directive EMC 2004/108/EC Electromagnetic Compatibility